

Amchit F



SEQUENCE LISTING

<130> KUMAGAI, Monto H.
<130> DELLA-CIOPPA, Guy R.
<130> ERWIN, Robert L.
<130> McGEE, David R.

<120> METHOD OF COMPILING A FUNCTIONAL GENE PROFILE BY TRANSFECTING A NUCLEIC ACID SEQUENCE OF A NON-PLANT DONOR INTO A HOST PLANT IN A POSITIVE SENSE ORIENTATION

<130> 008010137US07

<140> 09/359,300
<141> 1999-07-21

<160> 71

<170> FastSEQ for Windows Version 3.0

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<213> Tomato mosaic virus

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26

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<400> 2

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35

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41

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<400> 4

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24

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agtcgactct tcctcttctg gcat

24

<210> 7
<211> 30
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1 5

54

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Ser Pro Cys Asp Val Ser Asn Gly Thr Ser Phe Met Glu Ser Val Arg
10 15 20 25

102

gag gga aac cgt
Glu Gly Asn Arg

114

<210> 10

<211> 29

<212> PRT

<213> Tomato mosaic virus

<400> 10

Met Ser Val Ala Leu Leu Trp Val Val Ser Pro Cys Asp Val Ser Asn
1 5 10 15
Gly Thr Ser Phe Met Glu Ser Val Arg Glu Gly Asn Arg
20 25

<210> 11

<211> 39

<212> DNA

<213> Nicotiana benthamiana

<400> 11

gcctcgagtg cagcatggaa acccttctaa agctttcc

39

<210> 12

<211> 36

<212> DNA

<213> Nicotiana benthamiana

<400> 12

tcccttaggtc aaaggctctc tattgctaga ttgcc

36

<210> 13

<211> 111

<212> DNA

<213> Tobacco mosaic virus

<220>

<221> CDS

<222> (25) ... (111)

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Met Glu Thr Leu Leu Lys Pro Phe Pro
1 5

51

tct cct tta ctt tcc att cct act cct aac atg tat agt ttc aaa cac
Ser Pro Leu Leu Ser Ile Pro Thr Pro Asn Met Tyr Ser Phe Lys His
10 15 20 25

99

aac ttc act ttt
Asn Phe Thr Phe

111

<210> 14

<211> 29

<212> PRT

<213> Tobacco mosaic virus

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<213> Erwinia herbicola

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44

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<211> 43

<212> DNA

<213> Erwinia herbicola

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aagatctctc gagctaaacg ggacgctgcc aaagaccggc cgc

43

<210> 17

<211> 23

<212> DNA

<213> Tobacco mild green mosaic virus

<400> 17

tgtgaaactc gaaaaggttc cgg

23

<210> 18

<211> 36

<212> DNA

<213> Tobacco mild green mosaic virus

<400> 18

cgggttacct gggccgctac cggcggttag gggagg

36

<210> 19

<211> 31

<212> DNA

<213> Ribgrass mosaic virus

<400> 19

tactcgaggt tcataagacc gcggtaggcg g

31

<210> 20

<211> 36

<212> DNA

<213> Ribgrass mosaic virus

<400> 20

cgggtacccggccctacccgggttta gggagg

36

<210> 21
<211> 107
<212> DNA
<213> N. tabacum

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<222> (21) ... (107)

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1 5 10

53

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Ala Thr Arg Ser Asn Val Ala Gln Ala Asn Met Val Ala Pro Phe Thr
15 20 25

101

ggc ctt
Gly Leu

107

<210> 22
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<212> PRT
<213> N. tabacum

<400> 22

Met Ala Ser Ser Val Leu Ser Ser Ala Ala Val Ala Thr Arg Ser Asn
1 5 10 15
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20 25

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<212> DNA
<213> Tobacco mild green mosaic virus

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tatccattgc ggatgccaag cggaaaaccgt ggcaggtca tgtgcgaatt caaaatctga 540
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aagggttcga aggtgtggtt gacgatttcg tcgattcgggt tgctgcattc aaggcgattg 720

acagttccg aaagaaaaag aaaaagattg gaggaaggga tgtaaataat aataagtata	780
gatatagacc ggagagatac gcccgtcctg attcggtaca atataaagaa gaaaatggtt	840
tacaacatca cgagctcgaa tcagtaccag tatttcgcag cgatgtggc agagcccaca	900
gcgatgctta accagtgcgt gtctgcgtt tcgcaatcgt atcaaactca ggcggcaaga	960
gatactgtta gacagcagtt ctctaaccctt ctgagtgcga ttgtgacacc gaaccagcgg	1020
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aggagtcaaa ttcagcttt gctgaacgag ctctccaacg gacatggct gatgaacagg	1260
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ccgcaagggt ggcgtaaacc aaattacgca atgttttagg ttccatttaa atcgaacact	1440
gtatattcct ggatcacctg ttaacgtacg cgtggcgtat attacagtgg gaataactaa	1500
aagtgagagg ttcgaatcct ccctaaccctt ggtaggggc cca	1543

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<211> 55

<212> DNA

<213> rape mosaic virus

<400> 24

gatggcgccct taatacgact cactatagtt ttatTTTgt tgcaacaaca acaac	55
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<210> 25

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<213> rape mosaic virus

<400> 25

cttgtgccct tcatgacgag ctatattcag	30
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<210> 26

<211> 497

<212> DNA

<213> rape mosaic virus

<400> 26

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caacaaaaca aatacaaaca acaacaacat ggcacaattt caacaaacag taaacatgca	120
aacattgcag gctgccgcag ggcgcacacg cctggtaat gatttagct cacgacgtgt	180
ttatgacaat gctgtcgagg agctaaatgc acgctcgaga cgccctaagg ttcattactc	240
caaatacgatg tctacggAAC atgacgctgt tagcttcaaa cgcttatccg gagtttggaa	300
tttccttac tcataccca catgccgtac actccctgc gggggccctaa aggacttttgg	360
agtttagagta tctcatgtatg caagttccgt tcgggtctt gacgtacgac atcgtggta	420
actttgcagc gcacccccc aaaggacgcg actacgttca ctgctgtatg ccaaacttgg	480
atgtacgtga tatacgat	497

<210> 27

<211> 55

<212> DNA

<213> rape mosaic virus

<400> 27

gatggcgccct taatacgact cactatagtt ttatTTTgt tgcaacaaca acaac	55
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<210> 28		
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atcgttaaa ctggccctt acccggggtt agggagg		37
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aacattccag gctgccgcag ggcgaacacag cctggtaat gatttagcct cacgacgtgt	180	
ttatgacaat gctgtcgagg agctaaatgc acgctcgaga cggccctaagg ttcattactc	240	
caaatacgatg tctacggAAC agacgctgtt agcttcaaAC gcttatccgg agtttgagat	300	
ttcccttact cataccaaa catgccgtac actcccttgc gggtggccta aggactctt	360	
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Met Ile Arg Phe Leu Val Leu Ser Leu Leu Ile
1 5 10

ctc acc ctc ttc cta aca act cct gct gtg gag ggc gat gtt agc ttc
Leu Thr Leu Phe Leu Thr Thr Pro Ala Val Glu Gly Asp Val Ser Phe
15 20 25

100

cgt tta tca
Arg Leu Ser
30

200

<210> 40
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<213> Trichosanthes kirilowii

210

<400> 40
Met Ile Arg Phe Leu Val Leu Ser Leu Leu Ile Leu Thr Leu Phe Leu
1 5 10 15
Thr Thr Pro Ala Val Glu Gly Asp Val Ser Phe Arg Leu Ser
20 25 30

220

<210> 41
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<212> PRT
<213> P yaelii

230

<400> 41
Ser Tyr Val Pro Ser Ala Glu Gln Ile Leu Glu Phe Val Lys Gln Ile
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Ser Ser Gln

240

<210> 42
<211> 839
<212> DNA
<213> Nicotiana benthamiana

250

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<221> CDS
<222> (15) ... (677)

260

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1 5 10

50

270

agc ttc aag ctc gtt atc gtt ggc gat gga ggc aca ggg aag acc aca
Ser Phe Lys Leu Val Ile Val Gly Asp Gly Thr Gly Lys Thr Thr
15 20 25

280

98

ttt gta aag aga cat ctt act gga gag ttt gag aag aag tat gaa ccc
Phe Val Lys Arg His Leu Thr Gly Glu Phe Glu Lys Lys Tyr Glu Pro
146

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30	35	40	
act att ggt gtt gag gtt cat cct ctt gat ttc ttc act aac tgt ggc			194
Thr Ile Gly Val Glu Val His Pro Leu Asp Phe Phe Thr Asn Cys Gly			
45	50	55	60
aag atc cgt ttc tac tgt tgg gat act gct ggc caa gag aaa ttt ggt			242
Lys Ile Arg Phe Tyr Cys Trp Asp Thr Ala Gly Gln Glu Lys Phe Gly			
65	70	75	
ggt ctt agg gat ggt tac tac atc cat gga caa tgt gct atc atc atg			290
Gly Leu Arg Asp Gly Tyr Tyr Ile His Gly Gln Cys Ala Ile Ile Met			
80	85	90	
ttt gat gtc aca gca cga ctg aca tac aag aat gtt cca aca tgg cac			338
Phe Asp Val Thr Ala Arg Leu Thr Tyr Lys Asn Val Pro Thr Trp His			
95	100	105	
cgt gat ctt tgc agg gtt tgt gaa aac atc cca att gtt ctt tgt ggg			386
Arg Asp Leu Cys Arg Val Cys Glu Asn Ile Pro Ile Val Leu Cys Gly			
110	115	120	
aat aaa gtt gat gtg aag aac agg caa gtc aag gcc aag cag gta aca			434
Asn Lys Val Asp Val Lys Asn Arg Gln Val Lys Ala Lys Gln Val Thr			
125	130	135	140
ttc cac agg aag aac ctc cag tat tac gag ata tct gcc aag agc			482
Phe His Arg Lys Asn Leu Gln Tyr Tyr Glu Ile Ser Ala Lys Ser			
145	150	155	
aac tac aac ttc gag aag cca ttc ttg tac ctt gct aga aag ctc gcc			530
Asn Tyr Asn Phe Glu Lys Pro Phe Leu Tyr Leu Ala Arg Lys Leu Ala			
160	165	170	
ggg gac gct aat ctt cac ttt gtg gaa tca cct gcc ctt gct ccc ccg			578
Gly Asp Ala Asn Leu His Phe Val Glu Ser Pro Ala Leu Ala Pro Pro			
175	180	185	
gaa gtt caa atc gac ttg gct gct cag cag cag cat gag gcg gag ctt			626
Glu Val Gln Ile Asp Leu Ala Ala Gln Gln His Glu Ala Glu Leu			
190	195	200	
gca gca gca agt cag cca ctt cct gat gac gat gat gac acc ttc			674
Ala Ala Ala Ser Gln Pro Leu Pro Asp Asp Asp Asp Asp Thr Phe			
205	210	215	220
gag tagagaaaaga gagatgtgat ctgtcactga ttaccgtta gggcttgcgt			727
Glu			
gaactttttt ttgttcatgg tgctatttt atgtgtccgt actttgaaat gaatcgatga			787
cattagtaat tttcattttt aagttttaa ctgtcgctat gaaaagtgaaa ac			839

<211> 221
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<213> Nicotiana benthamiana

<400> 43

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His	Leu	Thr	Gly	Glu	Phe	Glu	Lys	Lys	Tyr	Glu	Pro	Thr	Ile	Gly	Val
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Glu	Val	His	Pro	Leu	Asp	Phe	Phe	Thr	Asn	Cys	Gly	Lys	Ile	Arg	Phe
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Tyr	Cys	Trp	Asp	Thr	Ala	Gly	Gln	Glu	Lys	Phe	Gly	Gly	Leu	Arg	Asp
65														80	
Gly	Tyr	Tyr	Ile	His	Gly	Gln	Cys	Ala	Ile	Ile	Met	Phe	Asp	Val	Thr
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Ala	Arg	Leu	Thr	Tyr	Lys	Asn	Val	Pro	Thr	Trp	His	Arg	Asp	Leu	Cys
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Val	Lys	Asn	Arg	Gln	Val	Lys	Ala	Lys	Gln	Val	Thr	Phe	His	Arg	Lys
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Lys	Asn	Leu	Gln	Tyr	Tyr	Glu	Ile	Ser	Ala	Lys	Ser	Asn	Tyr	Asn	Phe
145														160	
Glu	Lys	Pro	Phe	Leu	Tyr	Leu	Ala	Arg	Lys	Leu	Ala	Gly	Asp	Ala	Asn
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Leu	His	Phe	Val	Glu	Ser	Pro	Ala	Leu	Ala	Pro	Pro	Glu	Val	Gln	Ile
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Asp	Leu	Ala	Ala	Gln	Gln	His	Glu	Ala	Glu	Leu	Ala	Ala	Ala	Ala	
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														215	220

<210> 44
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tcactaactg	tggcaagatc	cgtttctact	gttggatact	gtctggccaag	agaaatttgg	240
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agcacgactg	acatacaaga	atgttccaac	atggcacgt	gatctttgca	gggttttg	360
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<213> Arabidopsis thaliana

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gagagtttga gaagaagtat gaacccacta ttgggtttga gtttcatctt cctgatttct 180
tcactaactg tggcaagatc cgtttctact gttggatac tgctggccaa gagaatttg 240
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cagcacgact gacatacagg aatgttccaa catggcaccg tgatcttgc agggtttgc 360
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cttgcgttca cttttttttt 679

<210> 46
<211> 667
<212> DNA
<213> N. tabacum

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aagtatgaac ccactattgg tggatgggtt catcccttgc atttcttac taactgtggc 180
aagatccgtt tctactgttgg ggtatgtgc gccaagaga aatttgggg tcttagggat 240
ggttactaca tccatggaca atgtgtatc atcatgtttt atgtcacagc acgactgaca 300
tacaagaatg ttccaaacatg gcaccgtgtt ctttgcagggtt tttgtgaaaa catcccaatt 360
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ttccacagga agaagaacctt ccagtattac gagatatctg ccaagagcaaa ctacaacttc 480
gagaagccat tcttgcgttaccc tggatgttgggg acgctaatct tcactttgtt 540
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<210> 47
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aaaattcgct tttattgttgc ggtatgtgc ggtatgtgc ggtatgtgc ggtatgtgc 240
ggttactaca ttcatggca atgcgttccatttgcgtt atgttgcgtt atgttgcgtt 300
tacaagaatg ttccctacgttgc gcatcgatgttgcgtt ggtatgttgcgtt 360
gttctttgtt gaaacaaaatg tgatgtcaag aacaggcagg ttaaggccaa gcaagttacc 420
ttccacagga agaaaaattt gcaataactat gagatgttgcgtt ggtatgttgcgtt 480
gagaagccat ttctgttaccc tggatgttgggg tggatgttgggg tggatgttccgc 540
gaatcacctg cacttgcgtt ccctgttcccccggaaatggat tggatgttgggg tggatgttccgc 600
gaggtaga 667

gaacaagac ttttgcacgc cgctgcgcac gcactccag atgacgatga tgaagctttt
gaataga

660
667

<210> 48
<211> 137
<212> PRT
<213> Tobacco mosaic virus

<400> 48
Met Ala Leu Pro Asn Gln Gln Thr Val Asp Tyr Pro Ser Phe Lys Leu
1 5 10 15
Val Ile Val Gly Asp Gly Gly Thr Gly Lys Thr Thr Phe Val Lys Arg
20 25 30
His Leu Thr Gly Glu Phe Glu Lys Lys Tyr Glu Pro Thr Ile Gly Val
35 40 45
Glu Val His Pro Leu Asp Phe Phe Thr Asn Cys Gly Lys Ile Arg Phe
50 55 60
Tyr Cys Trp Asp Thr Ala Gly Gln Glu Lys Phe Gly Gly Leu Arg Asp
65 70 75 80
Gly Tyr Tyr Ile His Gly Gln Cys Ala Ile Ile Met Phe Asp Val Thr
85 90 95
Ala Arg Leu Thr Tyr Lys Asn Val Pro Thr Trp His Arg Asp Leu Cys
100 105 110
Arg Val Cys Glu Asn Ile Pro Ile Val Leu Cys Gly Asn Lys Val Asp
115 120 125
Val Lys Asn Arg Gln Val Lys Ala Lys
130 135

<210> 49
<211> 135
<212> PRT
<213> Tobacco Mosaic Virus

<400> 49
Met Ala Leu Pro Asn Gln Gln Thr Val Asp Tyr Pro Ser Phe Lys Leu
1 5 10 15
Val Ile Val Gly Asp Gly Gly Thr Gly Lys Thr Thr Phe Val Lys Arg
20 25 30
His Leu Thr Gly Glu Phe Glu Lys Lys Tyr Glu Pro Thr Ile Gly Val
35 40 45
Glu Val His Pro Leu Asp Phe Phe Thr Asn Cys Gly Lys Ile Arg Phe
50 55 60
Tyr Cys Trp Asp Thr Ala Gly Gln Glu Lys Phe Gly Gly Leu Arg Asp
65 70 75 80
Gly Tyr Tyr Ile His Gly Gln Cys Ala Ile Ile Met Phe Asp Val Thr
85 90 95
Ser Thr Thr Asp Ile Gln Glu Cys Ser Asn Met Ala Pro Ser Leu Gln
100 105 110
Gly Leu Lys His Ser Gln Leu Phe Phe Val Gly Ile Lys Leu Met Lys
115 120 125
Asn Arg Gln Val Lys Ala Gln
130 135

<210> 50

<211> 277

<212> DNA

<213> Tobacco mosaic virus

<220>

<221> CDS

<222> (1) ... (277)

<400> 50

gct act atg gtt gcc tct ccg gct cag gcc act atg gtc gct cct ttc 48
Ala Thr Met Val Ala Ser Pro Ala Gln Ala Thr Met Val Ala Pro Phe
1 5 10 15

aac gga ctt aag tcc tcc gct cct tcc cag cca ccc gca agg cta aca 96
Asn Gly Leu Lys Ser Ser Ala Pro Ser Gln Pro Pro Ala Arg Leu Thr
20 25 30

acg aca tta ctt cca tca caa gca acg gcg gaa gag tta act gca tgc 144
Thr Thr Leu Leu Pro Ser Gln Ala Thr Ala Glu Glu Leu Thr Ala Cys
35 40 45

agg tgt ggc ctc cga ttg gaa aga aga agt ttg aga ctc tct ctt acc 192
Arg Cys Gly Leu Arg Leu Glu Arg Arg Ser Leu Arg Leu Ser Leu Thr
50 55 60

ttc ctg acc tta ccg att ccg aat tgg cta agg aag ttg act acc tta 240
Phe Leu Thr Leu Pro Ile Pro Asn Trp Leu Arg Lys Leu Thr Thr Leu
65 70 75 80

tcc gca aca agt gga ttc ctt gtg ttg aat tcg aag t 277
Ser Ala Thr Ser Gly Phe Leu Val Leu Asn Ser Lys
85 90

<210> 51

<211> 92

<212> PRT

<213> Tobacco mosaic virus

<400> 51

Ala Thr Met Val Ala Ser Pro Ala Gln Ala Thr Met Val Ala Pro Phe
1 5 10 15
Asn Gly Leu Lys Ser Ser Ala Pro Ser Gln Pro Pro Ala Arg Leu Thr
20 25 30

Thr Thr Leu Leu Pro Ser Gln Ala Thr Ala Glu Glu Leu Thr Ala Cys
35 40 45
Arg Cys Gly Leu Arg Leu Glu Arg Arg Ser Leu Arg Leu Ser Leu Thr
50 55 60

Phe Leu Thr Leu Pro Ile Pro Asn Trp Leu Arg Lys Leu Thr Thr Leu
65 70 75 80
Ser Ala Thr Ser Gly Phe Leu Val Leu Asn Ser Lys

85 90

<210> 52

<211> 167
 <212> DNA
 <213> Arabidopsis thaliana

<400> 52
 acttgatctg tttcataacta aaacccaaaac tcatgttgt tcactccaaa cacaacaca 60
 gcagtaatca aaaatcgct tataacaaaa ggaaatgcaa caaaacagaa gaaacaacta 120
 agtagtaggc aagattcttc ttcactcgct ttcttggcta cggagcc 167

<210> 53
 <211> 393
 <212> DNA
 <213> Arabidopsis thaliana

<400> 53
 gaaaacgacgt cggctagttt ttgggcatgg cctgaccaggc agcaacaaca tcacaatcat 60
 catcagttca attgatcata ttgtctaaga acaacatcat actcatcttg atatcattat 120
 ttatcatcaa aagaaaattc ctagatttt tttataaagt attttcaaat tatttggcac 180
 gttaaaattt aattaaattt gtttattatgt ttacttgcgt ctgtttcata ctaaaaccaa 240
 aaggaaaacc aaaactcatg tttgttcaact ccaaacacaa acacagcagt aatcaaaaat 300
 cgtcttataa caaaaaggaa atgcaacaaa acagaagaaa caactaagta gtaggcaaga 360
 ttcttcttca ctcgtttct tggttacggc gcc 393

<210> 54
 <211> 24
 <212> PRT
 <213> Arabidopsis thaliana

<400> 54
 Glu Thr Thr Ser Ala Ser Tyr Trp Ala Trp Pro Asp Gln Gln Gln Gln
 1 5 10 15
 His His Asn His His Gln Phe Asn
 20

<210> 55
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 55
 gaagcggctc gcccgttcg tgatgaagtg cgggaaggc aaagtttgc tcgatccaa 60
 cggaaagctcc gacatctcca tggccaattc cggccaaaac atcaggaagc ttgtgaagga 120
 tggtttcatc atcaggaagc caaccaagat tcactctcg tccagagctc gcaaaatgaa 180
 gattgccaag atgaagggtc gtcactctgg atacgtaag aggaagggtt cccgtgaagc 240
 taggttgcac acaaaggta tttggatgcg taggatgcgt gttcttaggc gtctgttgc 300
 gaaatacaga gagacgaaga agattgacaa gcacatgtac catgacatgt acatgcgtgt 360
 taagggtaat gtgttcaaga acaagcgtgt cttgttggag agtatccaca agtcaaaggc 420
 ttagaagctt ggggagaa 438

<210> 56
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 56

gaagaggctc gcctctagtg tcctccgctg tggcaagaag aaggctcttgt tagaccccaa	60
ttagaccaat gaaatcgcca atgccaactc ccgtcagcag atccggaagc tcatcaaaga	120
tgggctgate atccgcaagc ctgtgacggc ccattccgg gctcgatgcc ggaaaaacac	180
cttgccgcg cggaaaggca ggcacatggg cataggtaa cggaagggtt cagccatgc	240
ccgaatgcca gagaaggtca catggatgag gagaatgagg attttgcgcc ggctgctcag	300
aagataccgt gaatctaaga agatcgatcg ccacatgtat cacagcctgt acctgaaggt	360
gaaggggaaat gtgttcaaaa acaagcggat tctcatggaa cacatccaca agctgaaggc	420
agacaaggcc cgcaagaa	438

<210> 57
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 57

gaagcggctc gccgcatacg ttagtgcgtt cggaaaggc aaagtttggc tcgatcccaa	60
cggaaagctcc gacatctcca tggccaaattc ccgcacaaac atcaggaagc ttgtgaagga	120
tgtttcatc atcaggaagc caaccaagat tcactctcg tccagagctc gcaaaatgaa	180
gattgccaag atgaagggtc gtcactctgg atacggtaa aggaagggtt cccgtgaagc	240
taggttgcac acaaagggtac tggatgcgt taggatgcgt gttcttaggc gtctgttggaa	300
gaaatacaga gagacgaaag agattgacaa gcacatgtac catgacatgt acatcggtgt	360
taagggtaaat gtgttcaaga acaagcgtgt cttgatggag agtataccaca agtcaaaggc	420
tttagaagcta ggggagaa	438

<210> 58
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 58

gaagaggctc gcctctagtg tcctccgctg tggcaagaag aaggctcttgt tagaccccaa	60
ttagaccaat gaaatcgcca atgccaactc ccgtcagcag atccggaagc tcatcaaaga	120
tgggctgate atccgcaagc ctgtgacggc ccattccgg gctcgatgcc ggaaaaacac	180
cttgccgcg cggaaaggca ggcacatggg cataggtaa cggaagggtt cagccatgc	240
ccgaatgcca gagaaggtca catggatgag gagaatgagg attttgcgcc ggctgctcag	300
aagataccgt gaatctaaga agatcgatcg ccacatgtat cacagcctgt acctgaaggt	360
gaaggggaaat gtgttcaaaa acaagcggat tctcatggaa cacatccaca agctgaaggc	420
agacaaggcc cgcaagaa	438

<210> 59
 <211> 145
 <212> PRT
 <213> Tobacco mosaic virus

<400> 59

Lys Arg Leu Ala Ala Ser Val Met Lys Cys Gly Lys Gly Lys Val Trp			
1	5	10	15
Leu Asp Pro Asn Glu Ser Ser Asp Ile Ser Met Ala Asn Ser Arg Gln			
20	25	30	
Asn Ile Arg Lys Leu Val Lys Asp Gly Phe Ile Ile Arg Lys Pro Thr			
35	40	45	
Lys Ile His Ser Arg Ser Arg Ala Arg Lys Met Lys Ile Ala Lys Met			
50	55	60	

Lys Gly Arg His Ser Gly Tyr Gly Lys Arg Lys Gly Thr Arg Glu Ala
65 70 75 80
Arg Leu Pro Thr Lys Val Leu Trp Met Arg Arg Met Arg Val Leu Arg
85 90 95
Arg Leu Leu Lys Lys Tyr Arg Glu Thr Lys Lys Ile Asp Lys His Met
100 105 110
Tyr His Asp Met Tyr Met Arg Val Lys Gly Asn Val Phe Lys Asn Lys
115 120 125
Arg Val Leu Met Glu Ser Ile His Lys Ser Lys Ala Lys Leu Gly Glu
130 135 140
Lys
145

<210> 60
<211> 147
<212> PRT
<213> Homo sapiens

<400> 60

Lys Arg Leu Ala Ser Ser Val Leu Arg Cys Gly Lys Lys Lys Val Trp
1 5 10 15
Leu Asp Pro Asn Glu Thr Asn Glu Ile Ala Ala Asn Ala Asn Ser Arg
20 25 30
Gln Gln Ile Arg Lys Leu Ile Lys Asp Gly Leu Ile Ile Arg Lys Pro
35 40 45
Val Thr Val His Ser Arg Ala Arg Cys Arg Lys Asn Thr Leu Ala Arg
50 55 60
Arg Lys Gly Arg His Met Gly Ile Gly Lys Arg Lys Gly Thr Ala Asn
65 70 75 80
Ala Arg Met Pro Glu Lys Val Thr Trp Met Arg Arg Met Arg Ile Leu
85 90 95
Arg Arg Leu Leu Arg Arg Tyr Arg Glu Ser Lys Lys Ile Asp Arg His
100 105 110
Met Tyr His Ser Leu Tyr Leu Lys Val Lys Gly Asn Val Phe Lys Asn
115 120 125
Lys Arg Ile Leu Met Glu His Ile His Lys Leu Lys Ala Asp Lys Ala
130 135 140
Arg Lys Lys
145

<210> 61
<211> 11
<212> DNA
<213> Phage

<220>
<221> promoter
<222> (0)...(0)
<223> T7 promoter

<400> 61

tatagtattt t

11

<210> 62

<211> 11
<212> DNA
<213> Tobacco mosaic virus

<400> 62
tataggtatt t 11

<210> 63
<211> 11
<212> DNA
<213> Tobacco mosaic virus

<220>
<221> promoter
<222> (0)...(0)
<223> N= Random base

<400> 63
tatagttttt 11

<210> 64
<211> 13
<212> DNA
<213> Tobacco mosaic virus

<220>
<221> promoter
<222> (0)...(0)
<223> N= A single random base

<400> 64
tatagtngtat 13

<210> 65
<211> 12
<212> DNA
<213> Nicotiana benthamiana

<400> 65
tataggtatt tt 12

<210> 66
<211> 14
<212> DNA
<213> Nicotiana benthamiana

<400> 66
tatagtcgtat 14

<210> 67
<211> 15
<212> DNA
<213> Nicotiana benthamiana

<220>
<221> tRNA
<222> (0)...(0)
<223> N= A random base
TMV vector RNA transcripts

<400> 67
tatagtngtt gtatt 15

<210> 68
<211> 21
<212> DNA
<213> Tobacco mosaic virus

<220>
<223> N= A random base

<400> 68
tatagtngtt gtngtngtat t 21

<210> 69
<211> 16
<212> DNA
<213> Tobacco mosaic virus

<400> 69
tatagtattt gtattt 16

<210> 70
<211> 10
<212> DNA
<213> Viral

<220>
<221> promoter
<222> (0)...(0)
<223> cDNA sequence

<400> 70
tataggtatt 10

<210> 71
<211> 12
<212> DNA
<213> Tobacco mosaic virus

<220>
<221> promoter
<222> (0)...(0)
<223> GTC bases and virus cDNA

<400> 71
tatagtcgta tt 12